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ABSTRACT

The aim of this survey, based on material held in the Aslib Library, was to produce a list of items dealing with cost and costings in library services, for use within the Aslib Research Department. Attention has been concentrated on material published since 1960, although a few items prior to this date have been included. Items which are considered to be particularly helpful have been marked with an asterisk. During the course of the search, references were found to material on related measurements, e.g., times, and it appeared useful that these also be included. However, no exhaustive search was made for such items; hence these sections are appended not as comprehensive lists, but rather as suggested readings. (Author)

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A Selective Bibliography on Measurement in Library and Information Services

compiled by Rose Reynolds

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Aslib

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Introduction

The aim of this survey, based on material held in the Aslib Library, was to produce a list of items dealing with cost and costings in library services, for use within the Aslib Research Department. Attention has been concentrated on material published since 1960, although a few items prior to this date have been included. Items which are considered to be particularly helpful have been marked with an asterisk.

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April 1970

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Wessel, C.J. Criteria for evaluating the effectiveness of library operations and services. Phase I: Literature search..... 1967.

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Standards – British Standards

E *Author Index*

Section A – Cost

Cost accounting

1. **Brutcher, Constance, and others**
   Cost accounting for the library. *Libr. Resources Tech. Serv.*, 1964, v.8, p.413–431. (Contains tables and models developed for cost accounting in the library).

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   Managerial cost accounting for a technical information center. *Amer. Docum.*, April 1969, v.20, no.2, p.111–118. Guidelines for designing a cost accounting system).

3. **Nitecki, Andre**
   Cost accounting forms designed by the Cost Accounting Study Committee of the Library Administration and Technical Services Section [of the Michigan Library Association]. *Michigan Libr.*, December 1963, v.29, no.4, p.19–21. (Specimen forms designed to 'aid the libraries to determine the unit cost of technical services of a library').

Cost analysis

4. **Bourne, Charles P. and Ford, D. F.**
   Cost analysis and simulation procedures for the evaluation of large information systems. *Amer. Docum.*, April 1964, v.15., no.2, p.142–149. ('A computer program has been written and used which simulates the several-year operation of an information system, and computes estimates of the expected operating costs.....')

5. **Denver University. University of Denver Library. Technical Services Division.**
   Cost analysis study: a project on technical processes seminar; under the direction of B.S. Wymar and H.R. Malinowsky. Denver, Col., 1965. (Report of a cost-analysis study (1960-1) of the Acquisitions, Cataloguing. Marking and Binding Units of the University of Denver Libraries. Contains some costs and descriptions of work activities).

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   Post mortems can be fun: the cost analysis of information systems. *Libr. J.*, July 1965, v.90, no.13, p.2968–73. (Discussion of general principles, with examples).

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   Cost analysis in a technical services division. *Libr. Resources Tech. Serv.*, 1963, v.7, p.312–326. (Contains estimated times for procedures, and some definitions of work activities).

Cost benefit analysis

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   Program budgeting and cost benefit analysis in libraries. *Coll. Res. Libr.*, March 1969, v.30, no.2, p.156–160. (Discussion of general principles).

Costing

9. **Herner, Saul**
   System design, evaluation and costing. *Spec. Libr.*, October 1967, v.58, no.8, p.576–581. ('.....Two basic principles that are discussed and emphasised are the need to define what the program should.. and should not be doing, and the need and means for determining real as opposed to apparent costs in the design process.')

10. **Lister, Winston C.**
    Least cost decision rules for the selection of library materials for compact storage. Lafayette, Indiana, Purdue University, 1967. (Suggests models for establishing costs).

Costing continued

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Technical service costs, statistics and standards. *Libr. Resources Tech. Serv.*, 1967, v.11, no.4, p.436–442. (Suggests methods for establishing costs and standards).

Costs

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Cost characteristics of library service. *Spec. Libr.*, December 1967, v.58, no.10, p.686–691. (Reports on a 1966 survey of nine aerospace libraries, gathering data on circulation, library staff, patrons served, library space. '.....Total operating costs of each aerospace library were estimated by using a fixed dollar amount spent per library staff member.')

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Scientific management of library operations. Scarecrow Press Inc., NY, 1966. (Includes sections on costs and times of library operations).

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Specialised information centers (Chapter 13: Costs and evaluation). Spartan Books, Washington D.C., 1965. (Results of a questionnaire sent to American specialised information centers).

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Library cost models: owning vs borrowing serial publications. Washington, DC, NSF, 1968. (A study of four university libraries. Costs studied were: acquisitions; subscriptions; cataloguing; binding; marking; administration; training. Contains tables of cost data).

Costs – abstracting

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Publications of the library and information department. In Ashworth, W. *Handbook of special librarianship and information work.* 3rd ed. rev.and enl., Aslib., 1967. p.482–532. (Offers some comparative costs for abstracting and reproduction methods).

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Costs – acquisition

18. Franklin, Robert D.
Book acquisition costs. *Libr. J.*, April 1965, v.90, no.7, p.1612–3. (Analysis of book acquisition costs of the public library, Toledo, Ohio.)

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'Total cost' of acquisitions in a community college. *Coll. Res. Libr.*, July 1967, v.28, no.4, p.273–276. ('The purpose of this analysis is to show a methodology for determining the total cost associated with library operations'. [Macomb County Community College]).

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Analyzing acquisitions and cataloguing costs. *Libr. Resources Tech. Serv.*, 1969, v.13, no.1, p.127–135. ('The procedures described were developed as part of a feasibility study to establish a book processing center for the state-supported academic libraries of Colorado.' Cost analysis was based on data collected at nine libraries, from which mean times were calculated).

Costs – bibliographic data conversion

21. Simmons, P. A.
An analysis of bibliographic data conversion costs. *Libr. Resources Tech. Serv.*, 1968, v.12, no.3, p.296–311. (Describes studies made by the staff of the Marc Pilot Project to determine costs involved in converting bibliographic data to machine-readable form.)

Costs – book catalogue production

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The economics of book catalogue production: a study prepared for Stanford University Libraries and the Council on Library Resources. Sherman Oaks, Ca., Advanced Information Systems, 1964.

Costs – book catalogue production continued
('The economics and procedures of book catalogue publications have been analyzed, general functional relations for the cost and time of different operations have been developed, and these have been applied specificially to the Stanford University Undergraduate Library').

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Book versus card catalog costs. *Libr. Resources Tech. Serv.*, 1963, v.7, no.3, p.229–236. (A comparison of the costs of producing both card and book form outputs of the Engineering Index. Includes comparative cost tables).

Costs – buildings and equipment

24. **Metcalf, Keyes D.**
Library building costs. *Coll. Res. Libr.*, March, 1965, v.26, no.2, p.109–113. ('The principles upon which data concerning costs of academic library buildings and their furnishings and equipment should be determined are enumerated, and a sample report form laid out').

Costs – catalogue card production (See also entry no.23)

25. ***American Library Association.**
Library Technology Project. Catalog card reproduction: report on a study.....1965, 81p. *LTP Publication No.9.* (Includes tables of comparative costs for card reproduction, equipment, materials, staff time).

26. **Bryan, H. and Slight, O. E.**
Cataloguing drive using the Polaroid CU5 close-up camera. *Aust. Libr. J.*, October 1968, 17, p.311–320. (National Union Catalogue/Library of Congress catalogue entries photographed to produce catalogue entries for the University of Sydney Library. Includes rough costs).

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Costs of library catalog cards produced by computer. *J. Libr. Autom.*, v.1, no.2, p.121–127. (Production costs of catalogue cards produced by four variants of the Columbia-Harvard-Yale procedure are analyzed).

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Note on the economics of catalogue card reproduction. *J. Docum.*, June 1965, v.21, no.2, p.128–130. (Compares estimated costs of producing University of Lancaster Library's catalogue cards by stencil duplicator, offset lithography and tape typewriter).

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A further note on the economics of catalogue card reproduction. *J. Docum.*, March 1966, v.22, no.1, p.55–58. (Gives costs of producing catalogue cards by multilith at University Library of Newcastle upon Tyne).

Costs – catalogue maintenance

30. ***Dolby, J. L., and others**
The cost of maintaining and updating library card catalogs. US Dept. of Health, Education and Welfare, 1969. (Contains '.....detailed information concerning comparative estimates of the cost of maintaining and updating library card catalogs....')

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Library catalogs: their preservation and maintenance by photographic and automated techniques: a study by the Research Libraries of the New York Public Library under a grant from the Council on Library Resources. 1968. (Public catalogue of the Research Libraries is discussed. Includes some costs).

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Cost comparison of computer versus manual catalog maintenance. *J. Libr. Autom.*, September, 1968, v.1, no.3, p.159–177. (Study of the Orange County Public Library, Orange, California).

Costs – cataloguing (see also entry no.20)

33. Bennett, F.
Mergers and catalogues. *Libr. Ass. Rec.*, April 1968, v.70, no.4, p.100–2. ('Some cataloguing problems arising from the London Boroughs' reorganisation, and how they are being dealt with in Tower Hamlets Libraries.....together with a note on a practical and inexpensive method of card reproduction.' [Flat-bed wax stencil duplicator]).

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Book catalog and card catalog: a cost and service study. Towson, Md., Baltimore County Public Library, 1967. (Includes cost comparison tables).

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Cost analysis studies in libraries: is there a basis for comparison? *Libr. Resources Tech. Serv.*, 1969, v.13, no.1, p.136–141. (University of Colorado Libraries study on centralized processing. Presents results, using a diary technique to produce costs and create standard times for original cataloguing.)

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A short cut to book catalogs? *Libr. J.*, March 15, 1968, v.93, no.6, p.1110–1113. (Proposes adoption of 'Books in print' as a library catalogue).

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Subject cataloguing, some considerations of costs. *Libr. J.*, October 1, 1964, v.89, no.17, p.3699–3703.

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Comparative costs of document indexing and book cataloguing. *Spec. Libr.*, 1965, v.56, p.724–726.

Costs – charging systems

40. American Library Association. Library Technology Project and Council on Library Resources
Study of circulation control systems: public libraries, college and university libraries, special libraries. Chicago, 1961, vii, 138p. (Lists times and costs for various kinds of charging systems. Discusses staff and equipment).

41. Kimber, Richard T.
The cost of an on-line circulation system. *Program*, October 1968, v.2, no.3, p.81-94. ('The unit costs are derived of the presently operating manual circulation system at Queen's University [Belfast], and the on-line computer-aided system in process of development. For the period 1971-5, during which the computer system is expected to be fully operational, they are: manual system 8.2 pence per loan; computer system 9.4 pence per loan. The computer system is thus 15% more expensive, but it will effect a 45% reduction in the library staff time devoted to circulation work').

Costs – checking

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Selective checking. *O & M Bull.*, May 1968, v.23, no.2, p.85–99. (Contains formulae and tables for estimating cost of checking).

Costs – classification

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The cost of classification: a neglected topic. *Libr. J.*, June 1964, v.89, p.2287–

Costs – classification continued

2291. (Recommends Library of Congress classification scheme as a better, cheaper alternative to the Dewey Decimal Classification)

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Costs estimates and time schedules in reclassification. In *The use of the Library of Congress Classification: Proceedings of the Institute.....sponsored by the ALA Resources and Technical Services Division, Cataloguing and Classification Section, NY City, July, 1966;* ed. by R. H. Schimmelpfeng and C.D. Cook. Chicago, ALA, 1968. p.192–208. (Quotes some times and costs).

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The cost of classification: a note. *Cat. Index.*, October 1969, no.16, p.4. (Separates cataloguing from classification times in order to justify centralised classification costs).

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46. *Baker, K. J.

Unit concept co-ordinate indexing: the costs of setting up and operating a system. *Northern Aslib Bull.*, Oct/Dec., 1966, v.11, no.4, p.3–27. (Describes the system in use at British Insulated Callender's Cables Ltd. Includes costs).

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Vergleiche der Wirtschaftlickeit von Sichtloch-Kerbloch-und Steilkarten. *Nachr. Dokum.*, 1963, v.14, p.65–72. (Comparative study of the costs of peek-a-boo, edge punched and conventional card systems. Summary in English).

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Testing, comparison and evaluation of recall, relevance and cost of co-ordinate indexing with links and roles. *Amer. Docum.*, July 1965, v.16, no. 3, p.201–208. ('.....evaluates the effect of system components.....on recall, relevance and cost of a patent index and compares retrievability and cost of co-ordinate indexing with classification').

49. *Van Dijk, Marcel

Essai sur le coût de la recherche documentaire par les méthodes d'indexation co-ordonnée. *Rev. Inter. Docum.*, November 1963, v.30, p.143–150. (Costs of different methods for co-ordinate indexing: contains graphs and tables).

Costs – documentation

50. *Hirayama, Kenzo

Time required, cost and personnel for documentation. *Amer. Docum.*, July 1962, v.13, no.3, p.313–319. (Compares use of visual card, edge punched card, and Hollerith card for documents from collection to retrieval. Costs in yen).

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The cost analysis of document surrogation: a literature review. *Amer. Docum.*, October 1969, v.20, no.4, p.302–310. ('A state-of -the-art literature review on the cost of classification, cataloguing, indexing and abstracting, has been conducted. It was found that while some data on specific costs are available, the literature is generally found lacking from the point of view of accuracy, completeness, consistency and availability.')

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Cost survey: cost of ordering, cataloguing and preparations in Southern California Libraries. *Libr. Resources Tech. Serv.*, 1962, v.6, no.4, p.337–350. (Contains some average times and costs for the procedures).

53. *Mathieu, J. and Barlen, S.

Guiding principles for time and cost in documentation work. Germany, TILS, 1959. (Includes times and costs for

Costs – documentation continued

abstracting, classification, proof-reading, duplicating, filing).

Costs – files

54. Hayes, R. M.

Measurement of file operating effectiveness – time, cost and information. Part 6 of the Final Report on the Organisation of Large Files. NSF Contract C-280, 1964. (Contains formulae for measuring effectiveness).

Costs – information storage and retrieval

55. Horner, J. K.

Low-cost storage and retrieval of organic structures by permuted line notations: small collections. *J. Chem. Docum.*, May 1967, v.7, no.2, p.85–88. (About 3,000 structures from the Stamford Research Institute files were coded. Includes some time-cost data).

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Time, cost and value factors in information retrieval: paper presented at the IBM Information Retrieval Systems Conference, Poughkeepsie, NY, September 21–23, 1959. ('Deals with a study conducted by the Operations Research Division of the Lockheed Aircraft Corporation to unearth some of the economic factors behind the library information handling system in a typical engineering organisation').

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The cost of scientific information. *J. Chem. Docum.*, November, 1965, v.5, no.4. (Discusses problems involved in establishing true costs).

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A comparative study of three systems of information retrieval: a summary. *Amer. Docum.*, October 1961, p.243–246. (Compares punched card file, handbook reproduced from that file, and conventional library-cataloguing references).

Costs – information systems

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Determining costs of information systems. *J. Chem. Docum.*, May 1967, v.7, no.2, p.101–106. (A critical cost analysis of the system used at Science Information Exchange).

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Costing information services. *Aslib Proc.*, May 1951, v.3, no.2, p.85–90. (Explains running costs of the Information Department of the British Scientific Instrument Research Association).

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The profitable management of information in industry. London, InComTec, 1969. 34p. (The problems and methods of organization of information in industry are outlined and related to the usefulness and cost to the organization).

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Information services: measuring the cost. *Aslib Proc.*, 1956, v.8, p.269–287. (Indicates some methods for estimating costs).

63. Sharp, Harold S.

Engineering library costs. *Machine Design*, October 27, 1960, v.32, no.22, p.108–111. (Quotes some costs and statistics).

64. Taylor, L.

Cost research on a library service. *Aslib Proc.*, 1961, v.13, no.8, p.238-248. (Presents results of a survey of the costs of services from Gear Divisions Library of David Brown Industries Ltd. Includes tables and costs and time percentages in various areas).

Costs – mechanization (See also entry no.84)

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Some experiments in the selective dissemination of information in the field of plasma physics. *Inform. Stor. Retr.*, 1968, v.4, p.187–200. (Includes comparative costs of manual and mechanized systems).

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Comparative costs of converting shelf list records to machine-readable form. *J. Libr. Autom.*, March 1968, v.1, no.1, p.66–74. (A study at Michigan State University Library comparing three methods of conversion: key punching, paper tape typewriting, optical scanning by service bureau).

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Costs of data processing in university libraries. *Coll. Res. Libr.*, November 1963, v.24, p.487–495. (Offers some cost comparisons with conventional procedures).

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Estimating data processing costs in libraries. *Coll. Res. Libr.*, 1964, v.25, p.400–403, 431. (The constant factors in costs are identified. After discussing the possible role of non-computerised equipment, the author details cost considerations for various types of output in relation to systems design).

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Cost distribution and analysis in computer storage and retrieval. Pt 1, *Amer. Docum.*, April 1966, v.17, no.2, p.89–95. Pt 2, *Amer. Docum.*, July 1967, v.18, no.3, p.162–164. (A method for costing computer jobs done by mechanized storage and retrieval activity is proposed and discussed. Job unit costs are calculated).

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How to computerise your serials and periodicals when you don't know how. *Wilson Libr. Bull.*, April 1970, v.44, no.8, p.861–4. (Step-by-step account of the procedures used at University of Alaska, Fairbanks, including chart of costs and times).

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The Unilever research SDI system. *Inform. Stor. Retr.*, 1970, v.6, p.53–71. (Describes the computer system and search programs together with the costs of the operation).

Costs – microfilming

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The economics of microfilming and document reproduction: papers given at Seminars held by the Microfilm Association of Great Britain, Cambridge, 27th September 1968, and Edinburgh, 8th November, 1968. MAGB, 1969. (General costs and prices).

Costs – photocopying

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The Xerox 914 copier: a cost analysis and an appraisal. *Aust. Libr. J.*, October 1962, v.11, no.4, p.206–209. (Gives a summary of costs for volumes of exposures from 1,000 to 100,000 per month).

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Factors affecting the cost of library photocopying. *Spec. Libr.*, February 1967, v.58, no.2.

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Simple calculations show that – photocopying saves money. *ALA Bulletin*, 1961, v.55, p.803–804. (Demonstrates that: 'Practically any photographic process offers substantial savings over manul operations in performance of the clerical routines of which it is capable.' Costs quoted in dollars).

Costs – planning

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Guide to equipping and staffing industrial technical libraries. *Aslib Proc.*, January 1957, v.9, no.1, p.12–28. (Suggests estimated costs for equipping a hypothetical library of 25,000 volumes).

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The cost of materials for a science library. *Spec. Libr.*, July-August 1965, v.56, no.6, p.386–387. (Quotes instances of rising costs of materials).

Costs – preservation

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Preservation costs and standards. *Spec. Libr.*, October 1968, v.59, no.8, p.614–619. (Suggests standards of performance of various preservation techniques, and gives indicative costs of some types of preservation work in commercial shops and Library of Congress).

Costs – processing (See also entry no.38)

79. *Fasana, Paul J. and Fall, James, E.
Processing costs for science monographs in the Columbia University Libraries. *Libr. Resources Tech. Serv.*, 1967, v.2, no.1, p.97–114. (Contains estimated times and costs for processing procedures).

80. Heinritz, Fred J.
Optimum allocation of technical services personnel. *Libr. Resources Tech. Serv.*, 1969, v.13, p.99–101. ('A procedure is given for determining the optimum allocation of available man hours among the various functional subunits of any given technical processing division, so as to minimize the time required for a volume to be processed. Cost implications are also discussed').

Costs – searching (See also entry no.49)

81. Lazorick, Gerald J. and Minder, Thomas L.
A least cost searching sequence. *Coll. Res. Libr.*, March 1964, v.25, no.2, p.126–128.

82. *Overmyer, La Vahn
An analysis of output costs and procedures for an operational searching service. *Amer. Docum.*, April 1963, p.123–14[illegible]. (American Society for Metals Documentation Service. Contains tables of costs).

Costs – storage

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How many books should be stored where? An economic analysis. *Coll. Res. Libr.*, March 1967, v.28, no.2, p.92–103. ('Valid decisions.....can only be based upon comparing cost of storage with the value of having the same materials at hand. Considerations for such determinations are raised, and formulae are proposed').

Costs – union catalogue production

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The production of a printed union catalogue by computer. *Libr. Ass. Rec.*, September 1965, v.67, no.9, p.311–316. (London Borough of Barnet. Gives some costings).

Section B – Time

Times – acquisition processes

85. **Dougherty, Richard M. and Boone, Samuel M.**
An ordering procedure utilizing the Xerox 914 electrostatic process. *Libr. Resources Tech. Serv.*, 1966, v.10, no.1, p.43–50. (Contains tables of times for the old and new procedures).

Times – catalogue card production

86. ***Thornton, Margaret B.**
This works for us: the perfect employer. *Spec. Libr.*, March 1967, v.58, no.3, p.187–188. (Short description of the use of magnetic tape-typewriter, for the production of catalogue cards. Table of comparative times for m.t.t., duplimat, manual typing).

Times – cataloguing

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Cataloguing and classification in British university libraries. Part 2: the labour force. *J. Docum.*, March 1969, v.25, no.1, p.43–51. (Gives percentages of time spent by graduate and non-graduate staff in classification and cataloguing, and other procedures).

Times – charging systems
See entry no.40.

Times – classification
See entries nos.50, 44, 53 and 87.

Times – documentation
See entries nos.50 and 53.

Times – files
See entry no. 54.

Times – indexing

88. **Jahoda, G.**
Indexing with edge-notched and internally punched cards. In *Information retrieval today*. Minnesota, University of Minnesota, 1963. p.37–46. (Gives comparative times for the systems).

Times – information storage and retrieval
See entries nos.55 and 56.

Times – procedures
See entries nos.7 and 13

Times – processing
See entry no.79.

'Standard' times – clerical procedures

89. ***Voos, Henry**
Standard times for certain clerical activities in technical processing [summary]. *Libr. Resources Tech. Serv.*, 1966, v.10, no.2, p.223–227. (Summary of the author's thesis of the same title, q.v. Contains tables of mean times for activities).

90. ***Voos, Henry**
Standard times for certain clerical activities in technical processing. Ann Arbor, University Microfilms, 1965. (Discusses typing, lettering, posting, jacketing, tying, erasing, stamping, supervision).

'Standard' times – library procedures

91. ***Leonard, Lawrence E.**
The Colorado Academic Libraries Book Processing Center Project Time Study Methodology. *Libr. Resources Tech. Serv.*, 1969, v.13, no.1. (Includes tables of standard times for library procedures compiled from data collected during the study).

Section C – Staff

Staffing (See also entries nos. 50, 80, 106)

92. **Association of Assistant Librarians**
Working conditions in libraries: a survey, by Peter Jordan. Library Association, 1968. (A survey of public, special and academic libraries in Britain. Studies recruitment, library school, education, training, salaries, welfare, working conditions).

93. **Cohan, Leonard and Craven, Kenneth**
Science information personnel. Modern Language Association of America, 1961. (Discusses education and qualifications best suited to specific kinds of information work).

94. **Elrod, J. McRee**
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